

UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

IN RE: JOHNSON & JOHNSON)
TALCUM POWDER PRODUCTS)
MARKETING, SALES PRACTICES AND) MDL Docket No. 2738
PRODUCTS LIABILITY LITIGATION)

This Document Relates To All Cases)

_____)

**DEFENDANTS' MEMORANDUM IN OPPOSITION TO PLAINTIFFS'
MOTION TO EXCLUDE THE GEOLOGICAL TESTING OPINIONS OF
DRS. ANN G. WYLIE AND MELINDA DARBY DYAR**

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INTRODUCTION

Plaintiffs' go-to testing experts Drs. Longo and Rigler oversaw examinations of Johnson's Baby Powder® and Shower-to-Shower® (the "Products") for asbestos, using four microscopy techniques. Based on this testing, they concluded that the Products contain "asbestos." Drs. Darby Dyar and Ann Wylie, two extremely reputable and prominent scientists, reviewed the work done by Drs. Longo and Rigler and their designees. Unlike Dr. Longo, a professional expert who has been deposed thousands of times, Drs. Dyar and Wylie are accomplished researchers who have devoted their careers to the laboratory, not the courtroom. As Drs. Dyar and Wylie explain in their reports, Drs. Longo and Rigler identified "asbestos" in the Products by calling nonasbestiform minerals "asbestos" and by manipulating their testing methods in ways that are scientifically unreliable.

Plaintiffs' efforts to exclude these opinions should be rejected for two fundamental reasons.

First, despite the "liberal policy" applied by the Third Circuit in determining whether an expert possesses sufficient "scientific, technical, or other specialized knowledge" under Rule 702, *Pineda v. Ford Motor Co.*, 520 F.3d 237, 244 (3d Cir. 2008), plaintiffs claim that neither Dr. Wylie nor Dr. Dyar is qualified. This argument cannot be taken seriously. Dr. Wylie is one of the nation's leading experts on mineralogy generally and asbestos specifically. She has authored

dozens of peer-reviewed publications regarding talc, amphiboles, and/or asbestos. Even Drs. Longo and Rigler cite her work as authoritative. Plaintiffs' primary objection is that she has not *personally* used a transmission electron microscope ("TEM") to test for the presence of asbestos. But she has used a TEM to analyze asbestos. In any event, what matters is she has spent her career interpreting and analyzing TEM data in the asbestos context, which is precisely what she is doing here.

Dr. Dyar is similarly qualified to opine on the microscopy techniques Drs. Longo and Rigler use to purport to find asbestos in talc. She has spent her career identifying and quantifying minerals, has published numerous papers on the mineralogy of asbestiform minerals, and has written textbook chapters about the microscopy methods plaintiffs' experts utilize. As reported in a recent *New York Times* article, when NASA sought to analyze long-locked mineral samples from the Apollo moon landings, it hired Dr. Dyar.¹ Plaintiffs primarily argue that she does not have enough experience with asbestos specifically. But as explained below, Dr. Dyar's extensive experience in the relevant microscopy techniques is equally applicable to asbestos, a fact that plaintiffs cannot credibly challenge.

¹ Hall, *Sealed Cache of Moon Rocks to Be Opened by NASA*, N.Y. TIMES, Mar. 13, 2019, at A20 (attached as Ex. A165 to Suppl. Certification of Julie L. Tersigni ("Suppl. Tersigni Cert.")).

Second, plaintiffs also argue that Drs. Dyar and Wylie applied unreliable methodologies in formulating their opinions. These arguments are largely based on a fundamental misunderstanding of the role of rebuttal experts, who are permitted to criticize the opinions of plaintiffs' experts without having to conduct affirmative testing. In any event, plaintiffs' arguments resort to mischaracterizing the record and attacking straw opinions that Drs. Wylie and Dyar are not actually offering.

For example, plaintiffs principally attack Section G of Dr. Wylie's report, where she reviews the cosmetic talc deposits in Southern Vermont and Northern Italy, claiming that her conclusions are the result of "cherry-picked" documents. But Dr. Wylie conducted a comprehensive literature search, requested additional documents, and received exactly what she requested. And contrary to plaintiffs' claim, she does not use a "novel" definition of asbestos; indeed, she uses the same definition as the United States Congress. As to Dr. Dyar, plaintiffs fail to address the core of her criticisms of Drs. Longo and Rigler – i.e., that their various microscopic techniques are methodologically flawed – and also fail to show that the opinions they do address are unreliable.

For all of these reasons, explained more fully below, plaintiffs' motion should be denied.

BACKGROUND

A. Ann Wylie, Ph.D.

Dr. Wylie graduated *cum laude* from Wellesley College with a B.A. in geology.² She received a Ph.D. in economic geology, mineralogy, petrology and mining engineering from Columbia University.³ For over 40 years, she served as a professor in the Department of Geology at the University of Maryland, where she taught courses on physical geology, economic geology, environmental geology, geology and public policy, optical mineralogy, and ore microscopy.⁴

Dr. Wylie has authored scores of peer-reviewed publications related to geology, mineralogy, and petrology – 38 of which specifically discuss talc, amphiboles, and/or asbestos.⁵ Many of these publications have focused specifically on methodologies for identifying asbestos minerals.⁶ In addition to

² (Expert Report of Ann G. Wylie, Ph.D. (“Wylie Rep.”) at 2, Feb. 25, 2019 (attached as Ex. C6 to Omnibus Certification of Julie L. Tersigni (“Tersigni Cert.”), May 7, 2019 (ECF No. 9723-2)).)

³ (Curriculum Vitae of Dr. Ann G. Wylie, Ph.D. (“Wylie CV”) (attached as Ex. A to Wylie Rep.).)

⁴ (*Id.*)

⁵ (*See generally id.*; *see also* Dep. of Ann G. Wylie, Ph.D. (“Wylie Dep.”) 260:10-21, Mar. 13, 2019 (attached as Ex. B to Pls.’ Steering Committee’s Mem. of Law in Supp. of Mot. to Exclude the Geologic Testing Ops. of Drs. Ann G. Wylie & Melinda Darby Dyar (“Pls.’ Br.”), May 7, 2019 (ECF No 9741-1)).)

⁶ (*See generally* Wylie CV; *see also* Wylie Dep. 260:10-24 (plaintiffs’ counsel counting 39 peer-reviewed publications authored by Dr. Wylie that focus on the identification of asbestos).)

publishing her own peer-reviewed articles, Dr. Wylie has served as an editor of several highly regarded publications, including the *Journal of Toxicology and Applied Pharmacology*.⁷

Time and time again, regulatory and scientific consensus bodies have turned to Dr. Wylie for her expertise when faced with questions regarding asbestos. For example, the Occupational Safety and Health Administration (“OSHA”) twice invited Dr. Wylie to serve as an expert during hearings related to asbestos regulation.⁸ The U.S. Secretary of Education appointed Dr. Wylie to the Task Force on Asbestos in Schools.⁹ The Environmental Protection Agency (“EPA”) invited her to serve as session chair at the Conference on Monitoring and Evaluation of Airborne Asbestos Levels Following Abatement.¹⁰ And the U.S. Senate Committee on Environmental and Public Work invited Dr. Wylie to testify about an asbestos ban bill.¹¹

Similarly, the American Society for Testing and Materials (“ASTM”) invited Dr. Wylie to develop a polarized light microscopy (“PLM”) method for asbestos; the International Agency for Research on Cancer (“IARC”) invited her to

⁷ (See Wylie CV.)

⁸ (*Id.*)

⁹ (*Id.*)

¹⁰ (*Id.*)

¹¹ (Wylie Dep. 32:13-18.)

be a member of its working group on talc; the National Institute for Occupational Safety and Health (“NIOSH”) invited her to serve as a member of the peer-review panel on the asbestos roadmap as well as the planning committee for the elongated mineral particles workshop on terminology and characterization; and the Food & Drug Administration (“FDA”) invited her to present at last November’s Asbestos in Talc Symposium (“JIFSAN”).¹²

Even plaintiffs’ own experts rely on Dr. Wylie’s work. In their report, Drs. Longo and Rigler cite an article Dr. Wylie authored to support a criterion they claim to use to identify asbestos particles by TEM and PLM.¹³ Since October 2018, Dr. Longo has testified that he relies on Dr. Wylie’s work for various asbestos identification characteristics, such as a particle’s “bundle” morphology¹⁴ and the width of various amphibole fibers.¹⁵

¹² (Wylie CV.)

¹³ (2d Suppl. Expert Report of William E. Longo, Ph.D. & Mark W. Rigler, Ph.D. (“2d Suppl. Longo Rep.”) at 25, Feb. 1, 2019 (attached as Ex. C1 to Tersigni Cert.) (citing A.G. Wylie, *The Habit of Asbestiform Amphiboles: Implications for the Analysis of Bulk Samples*, ASTM Advances in Environmental Measurements Methods for Asbestos, STP 1342, Jan. 2000).)

¹⁴ (See Dep. of William E. Longo, Ph.D. (“Longo Rimondi-Ruman Dep.”) 79:19-21, *Rimondi v. BASF Catalysts LLC*, No. MID-L-2912-17, *Ruman v. BASF Catalysts LLC*, No. MID-L-2912-17 (N.J. Super. Ct. Jan. 7, 2019) (attached as Ex. E6 to Tersigni Cert.) (describing Ann Wylie’s article as an “authoritative document”).)

¹⁵ (Dep. of William E. Longo, Ph.D. (“Longo Dep.”) 241:10-13, Feb. 5, 2019 (attached as Ex. B48 to Tersigni Cert.).)

In her report, Dr. Wylie provides an overview of the nature of talc, amphibole, and serpentine minerals associated in and around talc deposits.¹⁶ She also provides insight into the critical differences between amphibole particles that form as asbestos (asbestos fiber) and those that form from crushing rock (cleavage fragments).¹⁷ Dr. Wylie explains, for example, that although nonasbestiform amphiboles, talc, and other minerals may form elongated fragments when broken during mining operations and mineral processing, those fragments are neither “asbestos” nor “asbestiform.”¹⁸ Dr. Wylie also opines that, based on her scientific literature review of the geologic setting of the mines providing cosmetic talc for the Products, it is unlikely that asbestos could be found in the Products.¹⁹

In addition, Dr. Wylie discusses how to affirmatively identify asbestos in mineral dusts such as talcum powder using PLM and TEM.²⁰ Specifically, she explains that when used properly, these microscopes can distinguish populations of

¹⁶ (Wylie Rep. at 4-6.) As Dr. Wylie explains, “amphibole and serpentine are both common rock-forming minerals” that “can be associated with talc ore.” (*Id.* at 1.)

¹⁷ (*Id.* at 6-10.)

¹⁸ (*Id.* at 9-10.)

¹⁹ (*Id.* at 18-21.)

²⁰ (*Id.* at 13-17.)

asbestos fibers and cleavage fragments based on differences in their optical properties, dimensions, and habits.²¹

Dr. Wylie also reviewed Drs. Longo and Rigler's report and determined that their purported identification of asbestos in the Products using PLM and TEM did not present evidence consistent with the optical properties or habit of asbestos.²² Dr. Wylie explains, for example, that Drs. Longo and Rigler misclassified multitudes of particles as "bundles" when their morphology (i.e., size and shape) was in fact consistent with cleavage fragments.²³

B. Darby Dyar, Ph.D.

Dr. Dyar studied geology at Wellesley College and received her Ph.D. in geochemistry and mineralogy from MIT.²⁴ She has held faculty positions in geology and astronomy at various institutions, including Mount Holyoke College, where she currently serves as Chair of the Astronomy Department.²⁵ Over the course of her academic career, she has taught mineralogy at least 20 times,

²¹ (*Id.* at 13-17.) "Habit is a mineralogical term specifying the physical form a mineral takes when it forms (grows) in nature The habit of growth of asbestos is referred to as asbestiform." (*Id.* at 6.)

²² (*Id.* at 13-17.)

²³ (*Id.*)

²⁴ (Expert Report of M. Darby Dyar, Ph.D. ("Dyar Rep.") at 5, Feb. 25, 2019 (attached as Ex. C30 to Tersigni Cert.).)

²⁵ (*Id.*)

including at MIT and at all three academic institutions where she has been a faculty member.²⁶

Dr. Dyar's research has resulted in more than 250 papers published in peer-reviewed journals.²⁷ While her research spans a number of different topics in mineralogy, the unifying thread has been developing and using analytical techniques to solve geological problems, most of which involve identifying and quantifying minerals in mixtures.²⁸ She has studied amphibole minerals her entire career, starting with a chapter in her thesis and extending to studies of their chemical variations that continue to this day.²⁹ Dr. Dyar has also published several papers relating to the mineralogy of asbestiform minerals, including papers on "serpentine and amphibole asbestiform minerals" (i.e., asbestos).³⁰ She has

²⁶ (Id.)

²⁷ (Id.) Not only has Dr. Dyar been a prolific author of publications in this subject area, but she has also served as an Associate Editor for the *American Mineralogist* since 2000, handling up to 30 papers each year. (Id. at 6.) She has edited a book for the Geochemical Society and one special volume of the *American Mineralogist*. (Id.) She personally reviews at least a dozen manuscripts for a wide variety of journals every year, as well as many research proposals. (Id.)

²⁸ (Id.) For example, she worked as a Participating Scientist on the science team for the Mars Exploration Rover *Curiosity*, where she studied the problem of identifying individual minerals based on rock measurements. (Id.) She studied meteorites from Mars and examined the spectra signatures of individual minerals, as well as the rock from which they were separated. (Id.) She serves on review panels for the National Science Foundation and NASA almost every year. (Id.)

²⁹ (Id. at 5 & n.4 (citing 14 papers).)

³⁰ (Id. at 5 & n.5 (citing 7 papers).)

“looked at asbestos fibers under a polarized light microscope in the course of [her] teaching for many years,” and she “covered the amphibole minerals in [her] miner[a]logy [class] as a routine thing.”³¹

Most importantly, Dr. Dyer has extensive knowledge regarding the microscopic techniques used by Drs. Longo and Rigler. Dr. Dyer’s textbook, *Mineralogy and Optical Mineralogy*, includes multiple chapters relating to PLM, energy dispersive x-ray analysis (“EDXA”), and x-ray diffraction (“XRD”).³² She has also authored numerous papers involving analysis by PLM,³³ EDXA,³⁴ XRD³⁵ and scanning electron microscopy (“SEM”)/TEM.³⁶

Dr. Dyer’s research has been recognized with both national and international awards.³⁷ She is a Fellow of the Mineralogical Society of America, the Geochemical Society, and the Geological Society of America (“GSA”).³⁸ She received the 2017 G. K. Gilbert award from the GSA for her outstanding

³¹ (Dep. of M. Darby Dyer, Ph.D. (“Dyer Dep.”) 294:20-295:6, Apr. 2, 2019 (attached as Ex. A to Pls.’ Br.).)

³² Dyer & Gunter, *Mineralogy and Optical Mineralogy*, Chs. 5, 9, 15, 16, 17, 18, 19 (2008).

³³ (Dyer Rep. Ex. A at 7-20 (citing nine papers).)

³⁴ (*Id.* (citing 18 papers).)

³⁵ (*Id.* (citing 21 papers).)

³⁶ (*Id.* (citing six papers).)

³⁷ (*Id.*)

³⁸ (*Id.* at 6.)

contributions to planetary science and the 2018 Eugene Shoemaker Distinguished Scientist medal from NASA.³⁹ In addition, Dr. Dyar received the Hawley Medal from the Mineralogical Association of Canada in 2017, and currently holds the position of Helmholtz International Fellow with the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt).⁴⁰ She even has an asteroid named after her: 7272 Darbydyar.⁴¹

Dr. Dyar is a rebuttal expert who explains the methodological flaws in Drs. Longo and Rigler's analysis, which used TEM and PLM. TEM has three components. First, EDXA, also called energy dispersive spectroscopy ("EDS"), provides information about the chemical composition of a mineral, which can help determine the mineral type (i.e., is it tremolite?).⁴² Dr. Dyar explains, among other

³⁹ (Id.)

⁴⁰ (Id.)

⁴¹ 7272 *Darbydyar* (1980 DD1), NASA Jet Propulsion Laboratory, <https://ssd.jpl.nasa.gov/sbdb.cgi?sstr=7272> (attached as Ex. J1 to Suppl. Tersigni Cert.); *Asteroids Carry Mount Holyoke Names*, Mount Holyoke, <https://www.mtholyoke.edu/media/asteroids-carry-mount-holyoke-names> (attached as Ex. J4 to Suppl. Tersigni Cert.).

⁴² Tremolite is one of the six minerals that can crystallize in an asbestosiform habit and form as asbestos, but it more commonly forms in a nonasbestiform habit and is not asbestos. *E.g.*, Perkins & Harvey, U.S. Env't Protection Agency, *Test Method: Method for the Determination of Asbestos in Bulk Building Materials A-1* (1993) ("EPA R-93") (attached as Ex. A112 to Tersigni Cert.). (See generally Defs.' Mem. of Law in Supp. of Mot. to Exclude Pls.' Experts' Asbestos-Related Ops. ("Asbestos *Daubert* Br.") at 5-7, May 7, 2019 (ECF No. 9736-3).)

things, that Drs. Longo and Rigler improperly omitted necessary numerical data from their results in favor of “eyeballing” EDXA graphs.⁴³

Second, Selected Area Diffraction (“SAED”) testing provides information about the mineral’s crystal structure – its unique arrangement of atoms – which also can help determine the mineral type. Dr. Dyer explains that reliable SAED testing requires multiple images from known points of view known as “zone-axis orientations.” But Drs. Longo and Rigler generally do not use zone-axis orientations, and never more than one.⁴⁴

Finally, TEM can provide a visual two-dimensional image of the particle that reveals its size and shape, including the particle’s aspect ratio.⁴⁵ Dr. Dyer explains that the size and shape of the particles identified by Drs. Longo and Rigler in fact reveal that they are not asbestosiform.⁴⁶

PLM provides a colored image of the particle. The color can reveal the mineral type; the image itself shows the size and shape of the particle. Dr. Dyer explains, among other issues, that Drs. Longo and Rigler’s PLM results do not

⁴³ (Dyar Rep. at 19.)

⁴⁴ (*Id.* at 40-41.)

⁴⁵ A particle’s “aspect ratio” is the ratio of a particle’s length to width. (*Id.* at 3.)

⁴⁶ (*Id.* at 52-56.)

appear to be reproducible.⁴⁷ Indeed, Drs. Longo and Rigler sent their samples to another lab to perform the same test with the same PLM method in an attempt to demonstrate that their testing is reliable and reproducible. But unlike Drs. Longo and Rigler's lab, that lab found **no asbestos** by PLM.⁴⁸

ARGUMENT

The standard for the admission of expert testimony under Rule 702 and *Daubert* is fully set forth in defendants' Motion to Exclude Plaintiffs' Experts' General Causation Opinions ("General Causation *Daubert* Brief") and further elaborated in their Response to Plaintiffs' Omnibus Brief Regarding the *Daubert* Legal Standard. In short, expert testimony is admissible when the witness is qualified with "specialized knowledge" and the opinion will "help the trier of fact," is "based on sufficient facts or data" and is "the product of reliable principles and methods" that have been "reliably applied . . . to the facts of the case." Fed. R. Evid. 702. Drs. Wylie and Dyar meet both criteria here – they are two highly qualified scientists with significant experience in the areas of geology, mineralogy and petrology and are offering reliable, scientifically supported opinions in their fields of expertise.

⁴⁷ *(Id.* at 51.)

⁴⁸ *(Id.* at 46-47.)

I. DRS. WYLIE AND DYAR ARE EMINENTLY QUALIFIED.

A. Dr. Wylie Is More Than Qualified To Critique The TEM-Based Opinions Of Drs. Longo And Rigler.

Plaintiffs claim that Dr. Wylie “lacks the necessary qualifications to opine on” Drs. Longo and Rigler’s use of TEM to identify “asbestos” in their reports.⁴⁹ But this argument has no force considering that Drs. Longo and Rigler’s report *cites to Dr. Wylie’s publication* as support for the asbestos identification criteria they employ when analyzing TEM data.⁵⁰ In fact, Dr. Longo referred to Dr. Wylie’s publications as “authoritative documents.”⁵¹ As set forth above, Dr. Wylie has dedicated much of her academic career to understanding what asbestos is and how to identify it.⁵² She has also published dozens of peer-reviewed articles that explain how to identify asbestos and distinguish it from nonasbestiform analogs of the same minerals using, among other methods, TEM.⁵³ Plaintiffs’ efforts to

⁴⁹ (Pls.’ Br. at 13.)

⁵⁰ (2d Suppl. Longo Rep. at 25 (citing Wylie, “*The Habit of Asbestiform Amphiboles: Implications for the Analysis of Bulk Samples*,” ASTM Advances in Environmental Measurements Methods for Asbestos, STP 1342, Jan. 2000).)

⁵¹ (Longo *Rimondi-Ruman* Dep. 79:19-21.)

⁵² At Dr. Wylie’s deposition, plaintiffs’ counsel conceded that she has experience in relevant areas. (See Wylie Dep. 243:18-21 (“Actually, I was going to actually ask you what your diet was, because I think you look awesome. Okay? So put that aside. I assume you have experience.”).)

⁵³ (Wylie CV.)

launch a qualifications attack on Dr. Wylie despite her stellar credentials fails miserably.

Plaintiffs' primary argument appears to be that Dr. Wylie has not *personally* operated a TEM to "test for the presence of asbestos."⁵⁴ This argument is both false – Dr. Wylie has operated a TEM herself – and self-defeating given that Drs. Longo and Rigler offer opinions about PLM even though they both admittedly lack experience using that type of microscope.⁵⁵ In any event, plaintiffs' argument misses the mark, since Dr. Wylie's opinions entail interpreting TEM data, which is something she has done throughout her career in numerous peer-reviewed publications.⁵⁶

⁵⁴ (Pls.' Br. at 13.)

⁵⁵ (Dep. of William E. Longo, Ph.D. 85:18-20 *Young v. Johnson & Johnson*, No. 1522-CC09728-02 (Mo. Cir. Ct. Jan. 25, 2019) (attached as Ex. E12 to Tersigni Cert.) ("Q. Have you ever personally analyzed a sample for the presence of asbestos using PLM? A. From start to finish? No."); Dep. of Mark W. Rigler, Ph.D. ("Rigler Dep.") 20:1, Feb. 6, 2019 (attached as Ex. B35 to Tersigni Cert.) ("I am not a PLM microscopist.").) In fact, Dr. Longo himself did not personally operate the TEM microscope either. He delegated that to his analysts. (Longo Dep. 261:5-8; Dep. of William E. Longo, Ph.D. 125:1-5, *Weirick v. Brenntag N. Am.*, No. BC656425 (Cal. Super. Ct. Apr. 27, 2019) ("4/17/19 Weirick Dep.") (attached as Ex. E10 to Tersigni Cert.).)

⁵⁶ See, e.g., Wylie, *Asbestos and Fibrous Erionite, in Asbestos and Mesothelioma* 11-41 (Joseph Testa ed. 2017) (attached as Ex. A181 to Suppl. Tersigni Cert.); Wylie, *Amphibole Dusts: Fibers, fragments and mesothelioma*, 54 Canadian Mineralogist 1403 (2016) ("Wylie 2016") (attached as Ex. A180 to Suppl. Tersigni Cert.); Wylie & Candela, *Methodologies for Determining the Sources, Characteristics, Distribution, and Abundance of Asbestiform and*

Indeed, Dr. Wylie has been publishing in this very area since her work with the Bureau of Mines in the early 1980s, where she co-authored a paper focused specifically on how to identify amphibole asbestos using TEM data that she obtained herself.⁵⁷ And her analysis of TEM data has continued in the decades since, including a 2016 peer-reviewed paper analyzing TEM data for the morphological characteristics of hundreds of amphibole asbestos particles.⁵⁸

Not only has Dr. Wylie analyzed TEM data in her publications, but she also has presented her analysis of TEM data to regulators and experts. Just last year, the FDA invited Dr. Wylie to present at a symposium where experts in asbestos mineral analysis, academicians, and regulators were invited to share their knowledge on testing approaches for analyzing talc for the presence of asbestos fibers.⁵⁹ As part of that presentation, she performed the exact task that plaintiffs

Non asbestosiform Amphibole and Serpentine in Ambient Air and Water, 18 J. Tox. & Envt'l Health 1 (2015) ("Wylie & Candela 2015") (attached as Ex. A178 to Suppl. Tersigni Cert.); Wylie, *Modeling Asbestos Populations: The Fractal Approach*, 30 Canadian Mineralogist 437 (1993) (attached as Ex. A182 to Suppl. Tersigni Cert.).

⁵⁷ Wylie et al., *Measurement of the Thickness of Amphibole Asbestos Fibers with the Scanning Electron Microscope and the Transmission Electron Microscope*, Microbeam Analysis (K.F.J. Heinrich ed. 1982) (attached as Ex. A179 to Suppl. Tersigni Cert.).

⁵⁸ See generally Wylie 2016.

⁵⁹ Asbestos in Talc Symposium, Participant List, JIFSAN (Nov. 28, 2018) (attached as Ex. J3 to Suppl. Tersigni Cert.). Neither Dr. Longo nor Dr. Rigler was invited.

contend she is unqualified for: a review of TEM data from Drs. Longo and Rigler's lab opining on whether it showed asbestos in talc.⁶⁰

Finally, plaintiffs argue that Dr. Wylie is unqualified because she refused, unlike Drs. Longo and Rigler, to opine on whether a TEM image of a single particle was a cleavage fragment or an asbestos fiber. Plaintiffs try to spin this as Dr. Wylie's inability to recognize asbestos under TEM when, in fact, she testified that this was not the proper way to draw such distinctions.⁶¹ Dr. Wylie made clear that a reliable methodology generally requires examining a *population* of particles rather than a *single* particle.⁶² Indeed, this opinion is consonant with the published science – and even Dr. Longo has acknowledged that visual TEM

⁶⁰ Ann Wylie Final Summary, JIFSAN (Nov. 28, 2018) (attached as Ex. J2 to Suppl. Tersigni Cert.).

⁶¹ (See Wylie Dep. 215:1-7 (testifying that it is “not reasonably sound” to “make distinctions on a particle-by-particle basis”).)

⁶² (*Id.* 209:15-17, 210:17-19, 212:9-11, 213:1-2.) As Dr. Wylie explained in her report, “While a single particle observed by microscopy might be confidently called a fiber or fiber bundle or fragment because of some defining characteristic(s), other particles cannot be so easily labeled, and must be viewed as part of a population of particles.” (Wylie Rep. at 13.) Plaintiffs’ experts also agree that an analysis of an entire population of particles can determine whether what is present is asbestos or nonasbestos. This is why plaintiffs’ Background section includes a discussion regarding Dr. Longo’s supposed analysis of aspect ratio distributions, including a half-page image. (Pls.’ Br. at 4-5.) Notably, plaintiffs do not mention that Dr. Longo did *not* do that type of analysis in this proceeding. The graph has no accompanying citation and it appears nowhere in his report for this litigation. It does not even relate to the samples he tested for these proceedings. Including this undisclosed opinion violates Rule 26(a)(2)(B), and it should be stricken.

cannot be used to identify a single asbestos fiber.⁶³ Accordingly, this is far from a legitimate basis for criticizing Dr. Wylie's qualifications.

B. Dr. Dyar Is More Than Qualified To Critique The Methodology Of Drs. Longo And Rigler.

Dr. Dyar opines on the various ways in which Drs. Longo and Rigler's microscopy work was methodologically flawed or otherwise biased to achieve the results that plaintiffs want – namely, finding “asbestos” in the Products.⁶⁴ Although Dr. Dyar is eminently qualified to offer these opinions, plaintiffs launch three primary attacks on her qualifications, arguing that Dr. Dyar: (1) has insufficient experience testing for the presence of asbestos; (2) acquired her knowledge specifically for litigation; and (3) is not qualified to opine on the presence or absence of asbestos in the mines where defendants sourced their talc. Each of plaintiffs' arguments lacks merit.

First, plaintiffs complain that Dr. Dyar is not qualified because she does not have sufficient experience testing for the presence of asbestos and “knows nothing about the methods used to test for the presence of asbestos in talcum powder.”⁶⁵ This is absurd. It would be hard to find someone more qualified than Dr. Dyar in mineral identification through microscopy. Indeed, she co-authored the textbook

⁶³ (Asbestos *Daubert* Br. at 40 & n.101.)

⁶⁴ (Dyar Rep. at 1-4.)

⁶⁵ (Pls.' Br. at 14-16, 18.)

Mineralogy and Optical Mineralogy: A Three-Dimensional Approach, created software for teaching mineralogy called *Hands-On Mineral Identification*,⁶⁶ and has extensive experience with *each* of the relevant microscopic techniques for identifying minerals. *Supra* Background § B. Asbestos, of course, is a mineral,⁶⁷ and plaintiffs' brief does not even attempt to show that its detection poses unique microscopy challenges for which Dr. Dyer is unqualified. Plaintiffs' claim is akin to arguing that Dr. Dyer is unqualified to identify the mineral content of the Martian soil samples from the *Curiosity* rover – as NASA has asked her to do – simply because she has not looked at Martian soil before.

Moreover, plaintiffs ignore Dr. Dyer's substantial expertise regarding the mineralogy of asbestiform minerals. Dr. Dyer has published numerous papers on this subject, “including papers on serpentine and amphibole asbestiform minerals” (i.e., asbestos).⁶⁸ As she explains: “The study of amphibole minerals has been a constant theme throughout my career, starting with a chapter in my thesis, extending to studies of its chemical variation that continue to this day.”⁶⁹ Not only

⁶⁶ (Dyar Rep. at 6.)

⁶⁷ (Dyar Dep. 362:6-16 (“So there’s nothing special about asbestos. It’s a mineral.... So there’s nothing particularly special about analyzing these materials.”).)

⁶⁸ (Dyar Rep. at 5 & n.4 (citing 14 papers).)

⁶⁹ (*Id.* at 5; *see* Dyar Dep. 362:10-16 (“So there’s nothing special about asbestos. It’s a mineral. Amphibole is amphibole, and the distinction between the

has she microscopically examined asbestos, she has taught on the subject of asbestos at least 20 times in her mineralogy classes.⁷⁰

At bottom, plaintiffs' criticism is that Drs. Longo and Rigler have more vocational experience testing for asbestos than Dr. Dyar. But Federal Rule of Evidence 702 does not place a priority on vocational experience, recognizing that there are many routes to expertise, including "by knowledge, skill, experience, training, or education[.]" Fed. R. Evid. 702. And Drs. Longo and Rigler's "experience" is not something that plaintiffs should be highlighting, because it has predominantly occurred (and in the case of testing cosmetic talc, entirely occurred) as professional witnesses.⁷¹ Moreover, their work has been excluded by courts on many occasions,⁷² and has been described by one court as "junk science," "employ[ing] misdirection and evasiveness," and "not credible and unsupported by any respectable community of scientists."⁷³

many different varieties and species in the amphibole group are very minor. So there's nothing particularly special about analyzing these materials. They're just minerals."").

⁷⁰ (Dyar Dep. 294:20-295:6.)

⁷¹ (See *Asbestos Daubert Br.* at 14-16.)

⁷² (*Id.* at 28-29.)

⁷³ Order Ex. A at 1, *In re Lamar Cty. Asbestos Litig.*, No. 2000-3559 (Tex. Dist. Ct. July 5, 2001) ("*In re Lamar Cty. Order*") (attached as Ex. E15 to Tersigni Cert.).

Second, plaintiffs' complaint that "most" of Dr. Dyar's knowledge was acquired specifically for litigation⁷⁴ is not true (and is, again, ironic, given the backgrounds of their experts). Dr. Dyar relies on her extensive experience analyzing minerals outside of the context of litigation, including teaching the subject for decades, conducting research resulting in over 200 relevant peer-reviewed publications, authoring a textbook on the subject and performing extensive work for entities such as NASA on mineral analysis.⁷⁵ By contrast, Drs. Longo and Rigler have only tested cosmetic talc for asbestos when being paid by plaintiffs' lawyers, and are the very definition of litigation scientists, as fully set forth in defendants' Asbestos *Daubert* Brief.⁷⁶

Plaintiffs next admonish Dr. Dyar for not having personally devised a protocol for analyzing asbestos.⁷⁷ As an initial matter, although she has not devised a protocol that is specifically designed to test for asbestos, Dr. Dyar has "designed many, many analytical protocols for a wide variety of instrumentation[.]"⁷⁸ Regardless, that is not a *Daubert* requirement. Dr. Dyar did

⁷⁴ (Pls.' Br. at 14.)

⁷⁵ (Dyar Rep. at 5-6.)

⁷⁶ (Asbestos *Daubert* Br. at 14-16.)

⁷⁷ (Pls.' Br. at 15.)

⁷⁸ (Dyar Dep. 265:1-3.)

not have to *personally* create a protocol to opine on whether Drs. Longo and Rigler are following an appropriate methodology.⁷⁹

Plaintiffs' other arguments are similarly meritless. For example, they criticize Dr. Dyar for needing to familiarize herself with the Blount method and ISO 22262-2 for the first time in litigation. But once again, this is not an even-handed criticism because Dr. Longo also learned about those two methods for the first time in cosmetic talc litigation.⁸⁰ Additionally, plaintiffs argue that Dr. Dyar does not have sufficient experience with asbestosiform “bundles.”⁸¹ But Dr. Dyar has previously analyzed bundles under the microscope⁸² and supplemented that experience by “refer[ring] to the literature to find what those images look like.”⁸³

Third, plaintiffs argue that “Dr. Dyar is not qualified to opine on the presence or absence of asbestos in mines where Defendants' talcum powder was

⁷⁹ That would be like saying an expert statistician needs to invent regression analyses in order to critique one. (*See, e.g.*, Dyar Rep. at 11-12.) In any event, that Dr. Longo helped devise an asbestos dust analysis standard apparently did not help him faithfully execute the ISO 22262 protocols he significantly deviated from in this litigation. (*See, e.g., id.*)

⁸⁰ (Email from Dr. William E. Longo, Ph.D., President of MAS, to Jerome H. Block, Partner at Levy Konigsberg, LLP (Mar. 7, 2018, 03:22PM EST) (on file with defendants) (attached as Ex. J6 to Suppl. Tersigni Cert.); Dep. of William E. Longo, Ph.D. 291:12-24, *Lanzo v. Cyprus Amax Minerals*, No. MID-L-7385-16 AS (N.J. Super. Ct. Oct. 24, 2017) (attached as Ex. E33 to Suppl. Tersigni Cert.))

⁸¹ (Pls.' Br. at 15-16.)

⁸² (Dyar Dep. 296:10-15.)

⁸³ (*Id.* 294:9-10.)

derived.”⁸⁴ Dr. Dyar, however, is not offering any opinion related to the mines themselves. As such, this argument is moot.

For all of these reasons, plaintiffs have failed to show that Dr. Dyar is unqualified to criticize Drs. Longo and Rigler’s methodology.

II. DRS. WYLIE AND DYAR’S METHODOLOGIES ARE SOUND.

A. Plaintiffs’ Attacks On Dr. Wylie’s Methodology Are Meritless.

Plaintiffs argue that Dr. Wylie did not “employ an appropriate methodology” because: (1) her “opinions are based on a small selection of cherry-picked documents”; and (2) she relies on a “novel (and unsupported) definition of asbestos.”⁸⁵ These arguments are based on mischaracterizations of Dr. Wylie’s methodology and opinions and should be rejected.

1. Dr. Wylie Employed A Proper Methodology In Reviewing The Literature On Italian And Vermont Mines.

Plaintiffs first argue that Dr. Wylie “only reviewed materials that were cherry-picked by J&J’s lawyers” and that she ignored defendants’ internal documents in forming her opinions related to the geology of defendants’ Italian and Vermont mines.⁸⁶ This is false. Dr. Wylie conducted a comprehensive

⁸⁴ (Pls.’ Br. at 17.)

⁸⁵ (*Id.* at 19-25.)

⁸⁶ (*Id.* at 19-23.)

literature search in a “database for geologic literature,”⁸⁷ which is reflected in her reference list of over 30 peer-reviewed articles.⁸⁸ She explained that the methodology she used in this litigation was no different from what she “would undertake in this literature review as an academic”⁸⁹ – a hallmark of methodological reliability under *Daubert*. *E.g., Voilas v. Gen. Motors Corp.*, 73 F. Supp. 2d 452, 460 (D.N.J. 1999) (Wolfson, J.).⁹⁰

Plaintiffs’ “cherry picking” argument focuses on Section G of Dr. Wylie’s report, where she opines on the “[d]ifferences in talc ore deposits and the distinctive and well-studied cosmetic talc deposits in Southern Vermont and Northern Italy” and cites certain mine examination reports by Dr. Fred Pooley, a mineral scientist from University College Cardiff.⁹¹ Plaintiffs argue that Dr. Wylie “was never informed that Dr. Pooley was deposed” and was “unaware that Dr.

⁸⁷ (Wylie Dep. 38:14-19.)

⁸⁸ (Wylie Rep. at 26-28.)

⁸⁹ (See Wylie Dep. 257:8-17 (“[F]or review of the literature and the reports, I considered myself as a reviewer of a document like I would in an academic setting for a journal.”).)

⁹⁰ (See also *id.* 258:2-10 (“Q. If you were undertaking a scientific review . . . in your role as professor emeritus, is there anything different you would have done in undertaking that literature review than you did here? A. No. Q. Are there any additional sources you would have sought out to consider? A. No.”).)

⁹¹ (Pls.’ Br. at 19-20; *see also* Wylie Rep. at 18-22.) Dr. Wylie has previously relied on Dr. Pooley’s work in her published research, and thus it is not surprising she would consider him a reliable source here. *See Wylie & Candela 2015* at 38 (citing Dr. Pooley). (See also Wylie Dep. 143:18-20, 144:9-145:20.)

Pooley found asbestiform tremolite in Italian talc” and “antigorite in samples from the Vermont talc mines.”⁹² But plaintiffs mischaracterize Dr. Pooley’s testimony. When asked whether he ever identified asbestos in any of defendants’ Italy or Vermont talc, Dr. Pooley testified as follows: “Q. And after all the testing that you did, were you able to ever find asbestos in the samples or the deposit samples that you looked at? A. **No.** Mineral types, yeah, amphibole mineral, ***but not asbestos, no.***⁹³ Moreover, Dr. Pooley confirmed in his testimony that antigorite is not asbestos.⁹⁴ Thus, Dr. Pooley’s deposition testimony would have only confirmed Dr. Wylie’s opinions.

Plaintiffs’ other arguments regarding information “J&J did not give [Dr. Wylie]”⁹⁵ are likewise unavailing. For example:

- Plaintiffs complain that Dr. Wylie did not review test results of core samples from defendants’ mines or test results of samples of the Products.⁹⁶ As explained repeatedly at her deposition, however, core and product testing reports were not within the scope of her specific assignment, which was to review the *scientific literature* on “the basic

⁹² (Pls.’ Br. at 20.)

⁹³ (Dep. of Fred Pooley, Ph.D. 36:22-37:2, *Ratcliff v. Borg-Warner Corp.*, No. 16-2-18128-7 (Wash. Super. Ct. Feb. 1, 2018) (attached as Ex. E32 to Suppl. Tersigni Cert.) (emphasis added); *see also id.* 315:20-316:8 (explaining that while he found tremolite in one sample of Italian talc, “it wasn’t asbestiform”)).

⁹⁴ (*See id.* 214:18-20 (“Q. Says antigorite. Is that an asbestos mineral? A. No.”).)

⁹⁵ (Pls.’ Br. at 20-23.)

⁹⁶ (*Id.* at 20-21.)

geology of the mine and the geologic setting of the deposits.”⁹⁷ In any event, even if Dr. Wylie had reviewed the documents plaintiffs identify, it would have been irrelevant because those documents do not show asbestiform amphibole contamination in the talc, as discussed in the Asbestos Daubert Brief.⁹⁸

- Plaintiffs argue that Dr. Wylie did not identify literature on the J&J defendants’ China talc deposits.⁹⁹ But as Dr. Wylie testified, and as captured by the title to Section G of her report, her literature review focused on the scientific literature regarding the *Vermont* and *Italy* talc deposits; the review did not include China.¹⁰⁰

⁹⁷ (Wylie Dep. 59:21-24.) Plaintiffs also object that Dr. Wylie did not review defendants’ internal testing documents where “her ‘specific assignment’ was to analyze and critique the work of Drs. Longo and Rigler.” (Pls.’ Br. at 21.) Plaintiffs’ argument is without merit. As a rebuttal expert, Dr. Wylie did not have to review internal historical testing data to opine on the methodological flaws in testing that Drs. Longo and Rigler conducted for this litigation. (*See* II.B.1, *infra*.)

⁹⁸ (*See* Asbestos *Daubert* Br. § IV.A.2.) For example, plaintiffs presented Dr. Wylie with a document purporting to find asbestiform minerals in “specific zones” of defendants’ Vermont deposits. (*See* Wylie Dep. 85:4-7 (discussing IMERYS 219720).) But this document actually explains that defendants “maintain[s] a selective mining program in Vermont that is directed toward **exclusion of all of these potentially fibre-bearing zones.**” (IMERYS 219720 (emphasis added) (attached as Ex. D8 to Suppl. Tersigni Cert.).)

⁹⁹ (Pls.’ Br. at 22.)

¹⁰⁰ (*See, e.g.*, Wylie Dep. 13:12-22 (describing the scope of her assignment as “review[ing] the literature on the deposits that had been used by Johnson & Johnson, Italy and Vermont”)). Plaintiffs also criticize Dr. Wylie for not knowing the exact start and end dates relating to defendants’ use of the various mines at issue, arguing that she conceded “timing is relevant.” (Pls.’ Br. at 22.) Her testimony shows, however, that she merely agreed that “time frame” generally is relevant to analyzing mine samples. (*Id.* 52:1-7.) Yet, Dr. Wylie’s review here did not concern mine samples, but rather the literature on the basic geologic settings of the Vermont and Italy mines. (*Id.* 59:21-24.) She did not need to know the precise start and end dates of defendants’ mine usage to conduct this review.

- Plaintiffs argue that Dr. Wylie differentiates between cosmetic and industrial talc, “but was unaware that J&J used the same mines for both cosmetic and industrial talc.”¹⁰¹ Plaintiffs, however, omit that defendants employed selective mining practices to identify cosmetic-grade talc when sourcing both grades from the same mine.¹⁰² Thus, a test of the one would not identify the contents of the other.
- Plaintiffs take issue with the fact that Dr. Wylie “did not know what methodology” was used to gather the data in one article she relies on in her report.¹⁰³ Yet, the one time she cites to this article, it is merely for its description of a “large, well-defined mass of actinolite in the Hammondsville mine” and not to discuss any sample testing.¹⁰⁴ Thus, her knowledge of the author’s test methods is irrelevant to her reliance on this article.

In any event, plaintiffs’ argument that Dr. Wylie did not review all relevant materials, even if it were correct, would not be a basis for excluding her opinions.¹⁰⁵ As explained in defendants’ Response to Plaintiffs’ Omnibus Brief Regarding the *Daubert* Legal Standard (filed simultaneously herewith and adopted

¹⁰¹ (Pls.’ Br. at 23.)

¹⁰² (See, e.g., Dep. of Patrick Downey 242:7-246:19, Aug. 7, 2018 (attached as Ex. B50 to Suppl. Tersigni Cert.); Dep. of Patrick Downey 425:17-426:6, Aug. 8, 2018 (attached as Ex. B51 to Suppl. Tersigni Cert.) (explaining selective mining practices used at the J&J defendants’ mines).)

¹⁰³ (Pls.’ Br. at 22; *see* Wylie Dep. 53:17-23.)

¹⁰⁴ (Wylie Rep. at 21.)

¹⁰⁵ Plaintiffs also complain that Dr. Wylie’s review included reliance on a publicly available mineral database, mindat.org. (Wylie Dep. 54:19-24.) Plaintiffs do not specify why they contend using this database would render her opinions unreliable. In any event, as Dr. Wylie testified, she selected her reliance materials in the same manner as she would for her academic research, which is a hallmark of methodological reliability. (*Id.* 258:2-10.)

herein), “[n]othing in *Daubert* . . . requires an expert to consider every single article on a topic in order to be admitted as an expert.” *In re C. R. Bard, Inc., Pelvic Repair Sys. Prods. Liab. Litig.*, No. MDL 2187, 2018 WL 4220616, at *5 (S.D. W. Va. Sept. 5, 2018); *see also*, e.g., *Huskey v. Ethicon*, 29 F. Supp. 3d 691, 735 (S.D. W. Va. 2014) (finding that expert’s “failure to review particular [internal] documents goes to the weight of his opinion, not its admissibility”).

The cases cited by plaintiffs are not to the contrary. Indeed, *In re Seroquel* affirmatively undermines their position.¹⁰⁶ *See In re Seroquel Prods. Liab. Litig.*, No. 6:06-md-1769-Orl-22DAB, 2009 WL 3806434 (M.D. Fla. June 18, 2009). There, the court rejected the plaintiffs’ attempt to exclude an expert for “cherry-picking” evidence because she “did a reasonably thorough review of the clinical and observational data . . . and formed her opinions over the course of that review.” *Id.* at *9. The same is true here. Contrary to plaintiffs’ contention that “Dr. Wylie only reviewed materials that were cherry-picked by J&J’s lawyers,” Dr. Wylie actually conducted a robust literature review and formed her opinions over the course of that review.¹⁰⁷

¹⁰⁶ (Pls.’ Br. at 19.)

¹⁰⁷ Plaintiffs’ remaining cases are also inapposite. One involved an expert failing “to discuss *her own peer-reviewed studies*” that reached opposite conclusions from those offered in her expert report, *see In re Zoloft (Sertraline Hydrochloride) Prods. Liab. Litig.*, 26 F. Supp. 3d 449, 460-61 (E.D. Pa. 2014), while the other specifically concerned the review of epidemiological studies and

For all of these reasons, plaintiffs' accusations of "cherry-picking" provide no basis for excluding Dr. Wylie's opinions.

2. Plaintiffs Misrepresent The Record In Arguing That Dr. Wylie Used A "Novel" Definition Of Asbestos.

Plaintiffs next argue that Dr. Wylie used an inappropriate methodology because she "relies on a truly novel (and unsupported) definition of 'asbestos.'"¹⁰⁸ This wildly misrepresents what Dr. Wylie actually said in her report and testimony.¹⁰⁹ Dr. Wylie testified that her definition of asbestos is the same as that used by Congress in the Toxic Substances Control Act, i.e., "the asbestiform varieties" of chrysotile, crocidolite, amosite, anthophyllite, tremolite or actinolite. 15 U.S.C. § 2642(3).¹¹⁰ It is also the same definition that is used by every federal regulation and statute. 15 U.S.C. § 2642(3); 29 C.F.R. § 1910.1001(b); 40 C.F.R. § 763.163; 40 C.F.R. § 61.141; 30 C.F.R. § 56.5001(b). And it is the same

how an expert cannot "cherry-pick" observational studies over randomized controlled trial studies, *In re Neurontin Mktg. & Sales Practices Litig.*, No. 04-cv-10739-PBS, 2011 WL 3852254, at *34 (D. Mass. Aug. 31, 2011).

¹⁰⁸ (Pls.' Br. at 23.)

¹⁰⁹ (Wylie Rep. at 6.)

¹¹⁰ (See Wylie Dep. 112:15-16 (stating, when asked for her definition of asbestos, "[y]ou can write the TSCA [Toxic Substances Control Act, 15 U.S.C. § 2642(3)] definition down. I'm happy with that").)

definition used in the ISO protocols that Drs. Longo and Rigler purport to have followed in this litigation.¹¹¹

Plaintiffs' argument confuses Dr. Wylie's definition of asbestos (described above) with her observations about the morphology (structure and shape) of populations of asbestos.¹¹² Plaintiffs thus appear to be arguing that Dr. Wylie's morphological criteria for asbestos, not her (well-accepted) definition of asbestos, are "truly novel (and unsupported)." But this too is incorrect, because Dr. Wylie uses the morphological criteria she developed in conjunction with the Bureau of Mines, which involved analyzing "thousands of particles" of bulk asbestos

¹¹¹ See, e.g., Int'l Org. for Standardization, *Air Quality – Bulk Materials: Part 1: Sampling and qualitative determination of asbestos in commercial bulk materials 2* (2012) ("ISO 22262-1") (attached as Ex. A74 to Tersigni Cert.).

¹¹² Plaintiffs misleadingly claim that Drs. Longo and Rigler "discuss in detail" the literature supporting the different dimensional criteria they espouse for detecting asbestos. (Pls.' Br. at 24.) As explained in full in defendants' Asbestos *Daubert* Brief, the dimensional criteria they rely on are intended for a completely different context than the one in which they use them. In short, they apply dimensional criteria from the definition of a "fiber" in the Asbestos Hazard Emergency Response Act ("AHERA") regulations. Yet, the fact that a particle meets the dimensional criteria of an AHERA fiber has nothing to do with whether that fiber is asbestos or not. This, in turn, produces the perverse situation that Dr. Longo admits he will call something asbestos even when it is not. (See generally Asbestos *Daubert* Br. § I.B.) In addition, plaintiffs' claim that Dr. Wylie "disagrees" with the NIOSH and OSHA standards for asbestos is misleading. (Pls.' Br. at 24.) She does not disagree with their standards for regulating asbestos; rather, she applies different dimensional criteria in defining a "fiber" than those used by NIOSH. (Wylie Dep. 109:8-20.)

populations to determine their morphology.¹¹³ These morphological criteria are reflected in both the EPA’s R-93 method, as well as the ISO protocols that Drs. Longo and Rigler purport to follow.¹¹⁴

Plaintiffs otherwise mischaracterize Dr. Wylie’s testimony on her morphology criteria for identifying asbestos. Plaintiffs argue that Dr. Wylie “take[s] the position that asbestos can **only** be conclusively identified when fiber bundles are present.”¹¹⁵ To the contrary, she testified that the presence of fiber bundles would be one form of “evidence for the presence of asbestos, provided the fibrils are small.”¹¹⁶ In that same vein, plaintiffs argue that Dr. Wylie opines that “asbestos requires a 20:1 mean aspect ratio,” but that Dr. Wylie “cannot point to any support or source for that standard.”¹¹⁷ Again, plaintiffs are simply wrong. At her deposition, Dr. Wylie pointed to the EPA’s R-93 method as one source.¹¹⁸

Finally, plaintiffs also argue that Dr. Wylie used an unreliable definition of asbestos because she is “unable to state how many fibers are needed to establish a

¹¹³ (Id. 239:10-25.)

¹¹⁴ EPA R-93; ISO 22262-1 at 22-23.

¹¹⁵ (Pls.’ Br. at 23-24 (emphasis added).)

¹¹⁶ (Wylie Dep. 149:20-23.)

¹¹⁷ (Pls.’ Br. at 24.)

¹¹⁸ (Wylie Dep. 159:9-13.)

population or a bundle of fibers.”¹¹⁹ But the ISO protocols Drs. Longo and Rigler claim to have followed do not delineate the minimum numbers of fibers needed to constitute a population of fibers or a bundle – and plaintiffs presumably are not suggesting that this is a flaw in their own experts’ opinions. In fact, there are no rigid minimum numbers for terms such as “population” and “bundle” because, as Dr. Wylie explained at her deposition, the answer “very much depends upon the characteristics” of the particles the analyst is seeing under the microscope.¹²⁰

For these reasons, plaintiffs’ arguments regarding Dr. Wylie’s definition of asbestos are baseless.

B. Plaintiffs’ Attacks On Dr. Dyar’s Methodology Are Meritless.

Plaintiffs’ criticisms of Dr. Dyar’s methodology are similarly meritless.¹²¹ As a threshold issue, plaintiffs broadly claim that all of Dr. Dyar’s criticisms of their experts’ asbestos detection methodology are “based upon speculation” and

¹¹⁹ (Pls.’ Br. at 24.)

¹²⁰ (Wylie Dep. 247:12-22.) Plaintiffs also take issue with Dr. Wylie for including tensile strength in her definition of asbestos. But as discussed in fn.169, below, this is a definitional characteristic of asbestos, with which even Dr. Longo agrees.

¹²¹ Once again, plaintiffs’ arguments highlight their own experts’ flaws. In truth, the actual speculation is that of Drs. Longo and Rigler, who purport to have detected “significant” amounts of asbestos in defendants’ Products but employed a methodology that – as Dr. Dyar’s criticisms demonstrate – cannot tell the difference between asbestos and nonasbestos particles.

“subjective belief.”¹²² In fact, Dr. Dyar’s opinions are based on her substantial experience and knowledge regarding the instruments and techniques that Drs. Longo and Rigler use, her detailed review of their depositions and thousand-page reports, and the numerous asbestos detection protocols and scientific articles she cites throughout her report.

1. Dr. Dyar Is A Rebuttal Expert Who May Criticize Plaintiffs’ Experts Without Performing Her Own Testing.

Plaintiffs’ attacks on Dr. Dyar’s methodology ignore two fundamental principles of *Daubert*: (1) rebuttal experts such as Dr. Dyar may criticize plaintiffs’ experts such as Drs. Longo and Rigler without conducting affirmative testing; and (2) experts must follow their chosen methodologies reliably, and it is entirely proper for a defense expert to demonstrate that plaintiffs’ experts did not do so.¹²³

First, plaintiffs’ argument that Dr. Dyar’s opinions should be excluded because she “gives no expert opinions,” follows “no methodology . . . other than to criticize Drs. Longo and Rigler” and did not test the Products herself,¹²⁴ fundamentally misunderstands the different roles of plaintiff and defense expert witnesses. As the Third Circuit – and federal courts across the country – have recognized, assessing the methodology of plaintiffs’ experts’ opinions is an

¹²² (Pls.’ Br. at 27-28.)

¹²³ (Pls.’ Br. at 25-40.)

¹²⁴ (*Id.* at 25-26.)

appropriate methodology for a defense expert under *Daubert*. See *Holbrook v. Lykes Bros. S.S. Co.*, 80 F.3d 777, 786 (3d Cir. 1996) (noting that the test for the admissibility of defense experts is “different” because “the defense d[oes] not bear” the burden of proof); *In re Abilify (Aripiprazole) Prods. Liab. Litig.*, 299 F. Supp. 3d 1291, 1368 (N.D. Fla. 2018) (finding it “entirely appropriate” that defendants’ experts’ opinions “were, essentially, critiques of Plaintiffs’ experts’ evidence, methodologies, and conclusions”). Courts have additionally explained that “[t]here is no requirement that a defense expert offer a competing opinion” on a particular issue because an expert’s “opinions properly may be limited to criticizing the analysis and conclusions presented by another party.” *In re Abilify*, 299 F. Supp. 3d at 1368; see also *In re Cessna 208 Series Aircraft Prods. Liab. Litig.*, No. 05-MD-1721-KHV, 2009 WL 1649773, at *1 (D. Kan. June 9, 2009) (“Contrary to plaintiffs’ suggestion, a rebuttal expert who critiques another expert’s theories or conclusions need not offer his own independent theories or conclusions”). In short, it was appropriate for Dr. Dyer to limit her opinions to criticizing those of plaintiffs’ experts under well-established law.

Plaintiffs’ argument that Dr. Dyer – when opining that Drs. Longo and Rigler’s results are consistent with thousands of minerals that are not asbestos – should have considered which of those thousands of minerals would be present in

the relevant talc mines is incorrect for similar reasons.¹²⁵ Drs. Longo and Rigler opined that their test results identified two specific minerals – tremolite and anthophyllite – both of which rarely form in the asbestosiform habit. Drs. Longo and Rigler do not purport to have considered which other minerals could be present in the talc mines at issue, and Dr. Dyar was not required to do so in rebuttal.

Second, plaintiffs' argument that Dr. Dyar "did not criticize the tools or standards Dr. Longo and his team used," but rather their unreliable application of these tools and standards, is no reason to exclude her opinions either.¹²⁶ It is black letter law that even generally accepted methodologies must be reliably applied to satisfy *Daubert*. Rule 702 prohibits expert testimony if the expert has not "reliably applied the principles and methods to the facts of the case." Fed. R. Evid. 702. In fact, Rule 702 was specifically amended in 2000 to ensure that the trial court "scrutinizes not only the principles and methods used by the expert, but also whether those principles and methods **have been properly applied.**" Fed. R. Evid. 702 (2000 adv. comm. note) (emphasis added). And as discussed in defendants' Asbestos *Daubert* Brief, the failure of experts to follow their own methodology is

¹²⁵ (Pls.' Br. at 27-28, 35; *see* Dyar Rep. at 35.)

¹²⁶ (Pls.' Br. at 25-26.)

an established basis for exclusion.¹²⁷ *See also, e.g., Ortiz v. Yale Materials Handling Corp.*, No. CIV 03-3657FLW, 2005 WL 2044923, at *9 (D.N.J. Aug. 24, 2005 (Wolfson, J.) (excluding expert who relied on study that actually supports defendant's position); *Amorgianos v. Nat'l R.R. Passenger Corp.*, 303 F.3d 256, 268-69 (2d Cir. 2002) (affirming exclusion of expert who "failed to apply his own methodology reliably"). Accordingly, it was proper, and indeed necessary, for Dr. Dyer to explain the myriad ways in which Drs. Longo and Rigler misused and misapplied relevant tools and standards in reaching their opinions.

2. Dr. Dyer Appropriately Criticizes Drs. Longo And Rigler's EDXA Testing.

Dr. Dyer opines that Drs. Longo and Rigler performed a scientifically flawed EDXA analysis in attempting to confirm the chemical composition of particles.¹²⁸ One of the many flaws in their methodology that she identifies is their failure to provide the quantitative data that their EDXA machine produces, instead of which they merely "eyeball[ed]" the results of their EDXA graphs, making it

¹²⁷ *See In re Lamar Cty.* Order at 1 (excluding Dr. Longo's testimony because "the methodologies claimed in the MAS tests were not followed").

¹²⁸ (Dyar Rep. at 19-27; Longo Dep. 70:3-6.) Plaintiffs claim that Dr. Dyer "finds the [EDXA] protocols and methods that [Dr. Longo] uses to be robust" (Pls.' Br. at 29), but again ignore that, as explained above, even generally accepted methodologies must be applied reliably.

impossible to verify their results.¹²⁹ Plaintiffs argue that “Dr. Dyar can point to no ISO or other standards that require [the] quantitative data.”¹³⁰ This is not true – Dr. Dyar identified “Newbury and Ritchie,” the “ISO standards” and “EPA requirements” as support for the need to use quantitative data.¹³¹ Otherwise, plaintiffs do not dispute that Dr. Dyar is correct in opining that the failure to produce or generate the underlying EDXA data affects verifiability – a problem even Dr. Rigler acknowledged.¹³²

¹²⁹ (See, e.g., Dyar Rep. at 17, 19, 22 (citing Newbury & Ritchie, *Performing elemental microanalysis with high accuracy and high precision by scanning electron microscopy*, J. Mater. Sci 5-17 (2015) (“Newbury & Ritchie”) (attached as Ex. A171 to Suppl. Tersigni Cert.)).)

¹³⁰ (Pls.’ Br. at 30.)

¹³¹ (Dyar Dep. 125:19-25, 128:16-21.) See also Newbury & Ritchie 499-500; Int’l Org. for Standardization, *Ambient Air – Determination of asbestos fibers – Indirect-transfer transmission electron microscopy method* 6, 10, 45, 46 (1999) (“ISO 13794”) (attached as Ex. A166 to Suppl. Tersigni Cert.); Yamate et al., *Methodology for the Measurement of Airborne Asbestos by Electron Microscopy* 46 (1984) (“Yamate 1984”) (attached as Ex. A158 to Tersigni Cert.); see also Krewer & Millette, *Asbestos Analysis by Transmission Electron Microscopy In-House Training*, 38 The Microscope 97, 106 (1990) (attached as Ex. A168 to Suppl. Tersigni Cert.). (Dyar Rep. at 22-24.) Plaintiffs repeat essentially this same argument on the following page of their brief – that Dr. Dyar cannot point to a “standard requiring . . . that quantitative data be generated in order analyze the chemical structure of a particle.” (Pls.’ Br. at 31.) And the same response holds: she can and did point to requirements found in ISO 13794 and Yamate 1984.

¹³² Dr. Rigler testified that the data are necessary if one is “[t]rying to understand the composition of these materials” because they are “part of info to try to figure out what you’re working with.” (Rigler Dep. 61:2-6.)

Dr. Dyar also explained that if the testing were reliable, one would expect different analysts to identify tremolite and anthophyllite in the same proportions, especially since the samples were randomly assigned.¹³³ But instead, some analysts identified anthophyllite at a much higher rate than other analysts.¹³⁴ Plaintiffs argue that Dr. Dyar did not “take into account” that the inconsistency could be the result of the analysts receiving samples sourced from different mines.¹³⁵ But Dr. Dyar considered that issue, analyzed it and rejected it.¹³⁶ As she explained, analysts whose samples came from mines in similar proportions still reached different results.¹³⁷

3. Dr. Dyar Appropriately Criticizes Drs. Longo And Rigler’s SAED Testing.

Plaintiffs’ criticisms of Dr. Dyar’s SAED opinions are similarly off-base. As explained in defendants’ Asbestos *Daubert* Brief, SAED produces a pattern of dots known as a “diffraction pattern” that reflects the arrangement of the atoms of the particle, and can thereby help determine its mineral type (i.e., is it

¹³³ (Dyar Rep. at 25.)

¹³⁴ (*Id.*)

¹³⁵ (Pls.’ Br. at 32.)

¹³⁶ (Dyar Rep. at 25 (“Perhaps the distribution of mineralogy … was the result of which localities each analyst happened to receive?”).)

¹³⁷ (*Id.*)

tremolite?).¹³⁸ A scientist looks at the dots in the projections obtained and measures the spacing between them (the “d-spacing”) and the angles between them, and then compares them to established measurements.¹³⁹ Dr. Dyar explains that a reliable SAED analysis has two components. First, a diffraction pattern must be taken from a specific perspective known as a “zone-axis orientation,” where the d-spacings and angles have established measurements that can be used as a basis of comparison against references.¹⁴⁰ Second, multiple diffraction patterns must be taken at different zone-axis orientations, because a crystal structure is three-dimensional and a single point of view will rarely provide enough information about the entire shape of the structure.¹⁴¹ Dr. Dyar explains that Drs. Longo and Rigler’s methodology is flawed because they did not take a zone-axis diffraction pattern for most particles, and when they did, they never took more than one, as is needed to confirm the crystal structure of a specimen.¹⁴²

Plaintiffs argue that Dr. Dyar improperly “assumes that since there is only one image in Drs. Longo and Rigler’s report, their team could not have looked at it

¹³⁸ ISO 22262-1 at 64-65; Brydson et al., *Analytical Transmission Electron Microscopy* 3 (2014) (“Brydson”) (attached as Ex. A15 to Tersigni Cert.).) (See generally Asbestos *Daubert* Br. at 50.)

¹³⁹ ISO 22262-1 at 4, 64-65. (See also Dyar Rep. at 28-32.)

¹⁴⁰ (Dyar Rep. at 2.)

¹⁴¹ (*Id.* at 2-3, 28-29.)

¹⁴² (*Id.* at 28-29; see Asbestos *Daubert* Br. at 57.)

from two different angles.”¹⁴³ But Drs. Longo and Rigler – who were under an obligation to disclose their entire opinion under Rule 26(a)(2)(B)(ii) – did not report multiple zone-axis orientations for any sample.¹⁴⁴ And notably, plaintiffs do not even argue that such an analysis was actually done. To the contrary, Dr. Longo admitted that “for all the MDL bottles [he] at most took only one zone-axis orientation for the particles [he] analyzed under SAED.”¹⁴⁵ In short, Dr. Dyar’s criticism, not plaintiffs’ counterfactual argument, reflects Drs. Longo and Rigler’s actual reports and testimony.

Next, plaintiffs contend that Dr. Dyar made errors in criticizing Drs. Longo and Rigler’s use of “*d*-spacings.” Specifically, Dr. Dyar opines that it was difficult to verify the SAED results in Drs. Longo and Rigler’s report because they used an “unspecified constant” to convert their measurements to the standard unit of length

¹⁴³ (Pls.’ Br. at 33.)

¹⁴⁴ (See 2d Suppl. Longo Rep.; *see also* Longo Dep. 143:21-24 (Dr. Longo also admitted that he “hope[d]” his “analyst document[ed] every instance in the report where they used multiple SAED patterns”).)

¹⁴⁵ (Longo 4/17/19 Weirick Dep. 125:1-5; *see also id.* 122:21-25 (admitting that for “no particle that [he] designated anthophyllite did [he] take more than one zone axis orientation.”); *id.* 124:21-24 (same for tremolite).) For some “anthophyllite” samples, the SAED analysts took two diffraction patterns, but not at two zone-axes and only to disqualify the sample as being talc. (*See, e.g.*, Longo Dep. 137:18-138:6 (“Q. Okay. So for anthophyllite, where you have two axes and so like two SAED patterns, in a vacuum, do those two patterns sitting in front of you, no other information, uniquely identify what you’re looking at as anthophyllite? A. I don’t know.”)).

for this scale, an “angstrom.”¹⁴⁶ Plaintiffs contend that Drs. Longo and Rigler did report on this constant, calling it “camera K,” a constant to convert pixels to angstroms.¹⁴⁷ But as Dr. Dyar explained, “[u]sing something that’s expressed in pixels per angstrom implies that in order to use it, you would need to be able to count pixels, and that is impossible in these images.”¹⁴⁸ That rendered “it impossible to corroborate their measurements,” which was her point.¹⁴⁹

4. Dr. Dyar Appropriately Criticizes Drs. Longo And Rigler’s PLM Testing.

Plaintiffs’ arguments regarding Dr. Dyar’s criticisms of Drs. Longo and Rigler’s PLM analysis also fail. Dr. Dyar opines that Drs. Longo and Rigler performed a scientifically flawed PLM analysis.¹⁵⁰ One of her many criticisms is that their results are not reproducible.¹⁵¹ For example, in a set of 21 samples, the analysts in Drs. Longo and Rigler’s lab found eight “positives,” whereas Lee Poye in the J³ Resources lab, analyzing those same samples by the same ISO 22262-1

¹⁴⁶ (Dyar Rep. at 33.)

¹⁴⁷ (Pls.’ Br. at 35-36; *see also* Dyar Dep. 235:11-236:1.)

¹⁴⁸ (Dyar Dep. 237:15-19.)

¹⁴⁹ (*Id.* 238:11-12.)

¹⁵⁰ (Dyar Rep. at 43-51.)

¹⁵¹ (*Id.* at 46-47.)

PLM method, found zero “positives.”¹⁵² Plaintiffs argue that Dr. Dyer did not take “into account the time an analyst spent with each sample, how much material was analyzed, or whether analysts were using an aberrational correctional lens.”¹⁵³

This argument is frivolous. Not only did Drs. Longo and Rigler not report on or testify to this information, but in suggesting that one of the two labs used “an aberrational correctional lens,” plaintiffs appear to be conceding that some of their experts’ PLM results are “aberrational” – or in other words, not reliable.¹⁵⁴

Finally, two of plaintiffs’ arguments are directed at typos that Dr. Dyer corrected at her deposition. First, they point out one instance where Dr. Dyer cited ISO 22262-**1**,¹⁵⁵ but as Dr. Dyer explained, “the 1 should be a 2.”¹⁵⁶ They also identified one image that should have been labeled a “dispersion image.”¹⁵⁷ Dr. Dyer explained that her point had “nothing to do with whether it’s a dispersion image or not. It has to do with the ridiculousness of there happening to be an amphibole grain that happens to be exactly the same length as a talc particle and

¹⁵² (*Id.*) As explained in defendants’ Asbestos *Daubert* Brief, Drs. Longo and Rigler asked Poye and his third-party lab to test samples of the Products to attempt to verify their results. This backfired, as the findings between labs were extremely inconsistent. (Asbestos *Daubert* Br. at 76.)

¹⁵³ (Pls.’ Br. at 36-37.)

¹⁵⁴ (*Id.*)

¹⁵⁵ (*Id.* at 38.)

¹⁵⁶ (Dyer Dep. 300:21-24.)

¹⁵⁷ (Pls.’ Br. at 37-38.)

happens to line up exactly along the edge of the talc particle.”¹⁵⁸ In other words, what Drs. Longo and Dr. Rigler called “asbestos” was really the edge of a talc particle.

5. Dr. Dyar Appropriately Criticizes Drs. Longo And Rigler’s Visual TEM Testing.

Plaintiffs are correct that “Dr. Dyar spends multiple pages critiquing Dr. Longo’s TEM analysis.”¹⁵⁹ But plaintiffs ignore most of her opinions – e.g., that Drs. Longo and Rigler “did not apply objective criteria for distinguishing between cleavage fragments, bundles and fibers,” misidentified cleavage fragments as asbestos, and generated highly inconsistent results evincing unreliability, particularly with respect to whether particles were “bundles” or “fibers.”¹⁶⁰ Rather, plaintiffs level several criticisms at the margins of Dr. Dyar’s TEM-related opinions. Plaintiffs’ approach confirms that the core of these opinions is admissible, and even their marginal criticisms lack merit.

Plaintiffs’ first argument on this issue – i.e., that Dr. Dyar incorrectly “emphasizes tensile strength and flexibility of [asbestos] fibers to imply that these attributes can be tested” directly¹⁶¹ – distorts Dr. Dyar’s opinions. Dr. Dyar merely

¹⁵⁸ (Dyar Dep. 285:24-286:12)

¹⁵⁹ (Pls.’ Br. at 38.)

¹⁶⁰ (*Id.* at 28.)

¹⁶¹ (*Id.*)

opines that tensile strength and flexibility are definitional attributes of asbestiform amphiboles – *a fact with which Dr. Longo agrees.*¹⁶² This does not “imply” a need to directly test for those properties to identify asbestos. As explained by one of the methods Drs. Longo and Rigler purport to use, ISO 22262-1, “the asbestiform habit is generally recognized” by a variety of characteristics under a microscope.¹⁶³ These include morphological characteristics that are *evidence* of high tensile strength and flexibility, such as observing “fibre bundles displaying splayed ends” and “fibres showing curvature,”¹⁶⁴ or observing the aspect ratio distribution of a population of amphibole particles.¹⁶⁵ Although plaintiffs later argue that Dr. Dyar did not sufficiently support her opinion that the latter technique (which requires no direct testing of tensile strength or flexibility) should be used to confirm that identified particles are asbestos rather than cleavage fragments,¹⁶⁶ Dr. Dyar’s discussion of this issue in fact relies on several supportive peer-reviewed publications.¹⁶⁷

¹⁶² (2d Suppl. Longo Rep. at 24.)

¹⁶³ ISO 22262-1 at 22.

¹⁶⁴ *Id.* at 23.

¹⁶⁵ *Id.* at 22.

¹⁶⁶ (See Pls.’ Br. at 39-40.)

¹⁶⁷ (Dyar Rep. at 59-64 (citing McKillip and Dyar, *Geostatistics Explained*, Cambridge University Press (2010); Wylie & Virta, *Size distribution measurements of amosite, crocidolite, chrysotile, and nonfibrous tremolite*, Digital

Similarly, plaintiffs criticize Dr. Dyar for opining that asbestos “[b]undles occur as separable groups of parallel fibers with splayed ends and matted masses,”¹⁶⁸ supposedly because she lacks “experience examining asbestos bundles under TEM.”¹⁶⁹ But plaintiffs do not argue that Dr. Dyar’s definition is wrong – nor could they, given that Dr. Longo agrees that asbestos “has to have high tensile strength, *flexible splayed fibers*, for asbestiform, and that’s a geological definition.”¹⁷⁰

Finally, plaintiffs claim that Dr. Dyar has no citation for her opinion that “mean aspect ratios for populations of asbestos particles range from 20:1 to

Repository at the University of Maryland (2016),
<http://dx.doi.org/10.13016/M2798Z>; Harper et al., *Characterization of Lone Pine, California tremolite asbestos and preparation of research material*. Ann. of Occup. Hyg., 1-13 (2014),
<https://academic.oup.com/annweh/article/59/1/91/2464346#supplementary-data>.) Relatedly, plaintiffs argue that Dr. Dyar could not identify the “minimum number of fibers or structures necessary” to perform the “population” analysis she addresses in her report. (Pls.’ Br. at 39.) Plaintiffs leveled this same argument against Dr. Wylie, and it is addressed in that context, *supra*. In short, plaintiffs do not dispute that the published scientific literature endorses using a “population” approach to characterize asbestos; nor do they dispute that the literature itself does not define a “minimum.” (See Dyar Rep. at 59-64.) More importantly, Dr. Dyar explains exactly what the “minimum” would be for these purposes: one “need[s] enough fibers to create distribution with an acceptable standard deviation on the mean.” (See Dyar Dep. 188:2-190:11.)

¹⁶⁸ (Dyar Rep. at 53.)

¹⁶⁹ (Pls.’ Br. at 38-39.)

¹⁷⁰ (Longo *Rimondi-Ruman* Dep. 79:4-11 (emphasis added); Dyar Rep. at 12 n.13 (citing Longo).)

100:1[.]”¹⁷¹ But her report cites the EPA’s R-93 protocol, which states that a population of asbestos particles has “[m]ean aspect ratios ranging from 20:1-100:1 or higher.”¹⁷²

For all of these reasons, plaintiffs’ arguments regarding Dr. Dyar’s TEM-related criticisms are meritless.¹⁷³

* * *

In sum, Drs. Longo and Rigler’s testing methodology suffers from numerous fundamental flaws that render their opinions unreliable. Dr. Dyar’s opinions, which point out those flaws, are sound and should not be excluded.

CONCLUSION

For the foregoing reasons, the Court should deny plaintiffs’ motion.

¹⁷¹ (Pls.’ Br. at 39-40.)

¹⁷² (Dyar Rep. at 13 (citing EPA R-93).)

¹⁷³ Plaintiffs criticize a footnote in Dr. Dyar’s report where she points out that Drs. Longo and Rigler did not provide data regarding the aspect ratios of any of the particles they analyzed by PLM. (Pls.’ Br. at 40 (discussing Dyar Rep. at 65 n.94 and Dyar Dep. 326:21-328:23).) Plaintiffs argue that Drs. Longo and Rigler’s reports “give[] the necessary data” to calculate the aspect ratios (*id.*), and that Dr. Dyar agrees. Neither is true. The data do not exist. Plaintiffs never point to them in the report. And Dr. Dyar did not agree. She said, “I would have to review the data again to make sure.” (Dyar Dep. 327:21-24.) Plaintiffs appear to be confusing TEM and PLM data, as this argument appeared in the TEM section of their brief.

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